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Ontario Shoreline Management Advisory Council

First Annual Report (1987 - 1988)

to the
Minister of Natural Resources



Ontario



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Shoreline Management
Advisory Council

Conseil consultatif sur
la gestion des rives

Room 5620
Whitney Block
Queen's Park
Toronto, Ontario
M7A 1W3

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Queen's Park
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CARON
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March 31, 1988

The Honourable Vincent Kerrio
Minister of Natural Resources
Whitney Block
Queen's Park
Toronto, Ontario
M7A 1W3

Dear Minister:

It is my pleasure, on behalf of the members of the Ontario Shoreline Management Advisory Council, to submit to you our First Annual Report for the year ending March 31, 1988.

Sincerely,

Shannon Olson
Chairman



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Advisory Council

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Whitney Block
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Bureau 5620
Edifice Whitney
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Chairman's Remarks


The appointment of your Shoreline Management Advisory Council has fulfilled the Order-in-Council (April 1, 1987) in the first year of its mandate. Your Shoreline Management Advisory Council travelled Ontario listening to views and opinions of the public about the shoreline. Your Council received many verbal and written submissions to assist us in the formation of our first annual report to you.

During this first year we promoted the future intentions of the Ministry of Natural Resources and the Conservation Authorities of Ontario. We assisted the Ministry in educating the public about the shoreline processes

We are impressed with the enthusiasm and knowledge of your Ministry and Conservation Authority officials in the development of shoreline management plans. We have appreciated how these same officials and the public have been most helpful and supportive in our work.

Your Council believes that the Province of Ontario and your Ministry have the unique opportunity to be a lead government and a showplace of coordinated shoreline management activities.

Serving on the Shoreline Management Advisory Council has been a most rewarding experience for Council members and we look forward in assisting and advising you as the Shoreline Management Program unfolds in its second year.

A handwritten signature in dark ink, appearing to read "Shannon Olson". The signature is fluid and cursive, with the first name "Shannon" written in a larger, more prominent script than the last name "Olson".

Mr. Shannon Olson
Chairman

Acknowledgements

The Shoreline Management Advisory Council would like to express its appreciation for the time and effort of all those who contributed to Council activities in its first year. The information, discussions, and guided field tours provided by the staff of many agencies was greatly appreciated.

We would particularly like to acknowledge the help of Mr. Guirish Sardesai and Mr. David Fay of the Conservation Authorities and Water Management Branch of the Ministry of Natural Resources. Mr. Sardesai organized the initial meetings of Council and provided considerable background information. Mr. Fay carried on the work initiated by Mr. Sardesai; organizing the public meetings, providing additional background information, assisting in the production of the report, and acting as Secretary to the Council. Both devoted a great deal of their personal time to ensure the fulfillment of our mandate in its first year.

Council would also like to thank all those members of the public who took the time to write or otherwise express their views on shoreline management to the Council.

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1.0 The Shoreline Management Advisory Council

1.1 Formation and Mandate of the Council

The Shoreline Management Advisory Council was formed in April of 1987 by the Province under the authority of the Ministry of Natural Resources Act. The Council was established to advise the Minister of Natural Resources on matters pertaining to the management of the Great Lakes shoreline of Ontario.

The Terms of Reference of the Council are as follows:

- a. solicit public opinion on shoreline management through public meetings held in different areas around the Great Lakes;
- b. submit, at the end of each fiscal year, a report to the Minister including a summary of Council activities for the year as well as the recommendations of the Council which are based on public input and the Council's assessment of the implementation of the Shoreline Management Program;
- c. serve as a source of general information for the public on the topic of shoreline management;
- d. assist in informing and educating the public about proposed actions of the Province with regard to the Shoreline Management Program; and
- e. assist in an advisory capacity in other duties with respect to shoreline management as requested by the Minister.

1.2 Members of the Council

Council members are appointed by the Minister of Natural Resources for one, two or three year terms beginning in April and ending in March. In 1987/88 Council consisted of the following members:

Chair

Mr. Shannon Olson
R.R. #4
Woodslee, Ontario
N0R 1V0

Vice-Chair

Dr. Patricia Petersen
167 Courcellette Road
Scarborough, Ontario
M1N 2T1

Member

Dr. Reid Kreutzwiser
3 Wilfrid Laurier Court
Guelph, Ontario
N1G 4L8

Member

Mr. Alexander Harry
92 Madeline Street
Sault Ste. Marie, Ontario
P6A 4N6

Member

Mr. Thomas Millar
10 Clubhouse Road
Turkey Point, Ontario
N0E 1T0

Member

Mr. Paul Tripp
108 Henry Street
Trenton, Ontario
K8V 3T7

Member

Mr. John Jeffs
Box 3154
R.R. #3
Collingwood, Ontario
L9Y 3Z2

Member

MAJ. R. Howey Langan (R)
Box 237
R.R. #5
Clinton, Ontario
N0M 1L0

Member

Mrs. Joanne Wintemute
5963 Corwin Avenue
Niagara Falls, Ontario
L2G 5L3

2.0 Summary of Council Activities in 1987

2.1 Orientation Meetings

This past year was the initial year of the Shoreline Management Advisory Council. Thus, one of Council's first tasks was to learn about shoreline management and the recent activities of government on the Great Lakes shoreline. To accomplish this task Council held a series of orientation meetings and site visits along the shoreline. A summary of each of these meetings is listed in Appendix A.

2.2 Public Meetings

Council held seven public meetings in communities near the Great Lakes during 1987 to obtain the public's views on shoreline matters. Public meeting locations, dates and attendance are listed below. A list of those who made presentations to Council can be found in Appendix B.

<u>Location</u>	<u>Date</u>	<u>Attendance</u>
Port Dover	September 25, 1987	69
Allanburg	September 26, 1987	19
Collingwood	October 3, 1987	17
Wheatley	October 16, 1987	22
Bayfield	October 17, 1987	41
Thunder Bay	October 24, 1987	10
Trenton	October 30, 1987	31

Individual shoreline property owners, representatives of shoreline coalitions, researchers, municipal politicians, Conservation Authority executive members and staff, and a few interested taxpayers attended these public meetings. It should be noted that some of the shoreline coalitions that made presentations at the public meetings have hundreds of shoreline property owners as members. The small attendance at some of the meetings does not indicate public apathy to shoreline matters.

Council also received many letters concerning shoreline management from property owners and other concerned members of the public. Council values highly the opinions expressed by the public and has used their contributions to prepare the assessment and the recommendations in this report.

In conjunction with the scheduled public meetings, Council invited representatives from local municipalities to meet separately and informally prior to the public meetings. This arrangement proved to be of benefit to all, providing Council with an insight into municipal views and concerns on shoreline management, and providing municipal representatives with additional information about the shoreline management program.

2.3 Educational Efforts

Council's efforts in 1987 to make the public aware of the shoreline program of the Province consisted of distributing literature and answering questions at public meetings, and talking to reporters about shoreline issues.

The literature included Provincial information on short-term programs for shore protection, shore protection loans, guidelines for long-term shoreline management planning, and methods to protect shoreline property, as well as Federal government booklets on Great Lakes water levels.

Council deliberately set aside a portion of each public meeting to answer any questions the audience may have had on shoreline topics. Council answered questions on lake level fluctuations, the concept of shoreline management planning, the need for mapping shoreline flood and erosion hazard areas, the Shoreline Property Assistance Act loan process, and many other shoreline subjects.

The Shoreline Management Advisory Council has asked the Minister of Natural Resources to have a brochure prepared describing all of the initiatives in the Provincial shoreline management program. It is hoped that this brochure will explain the program to the public as well as direct them to sources of more detailed information on shoreline management.

3.0 Topics of Concern and Recommendations

The Ontario Shoreline Management Advisory Council is most concerned with preventing loss of life and reducing damages from flooding and erosion along the shores of the Great Lakes system. Public interest in these two matters appears to be greatest, quite understandably, in localities that recently suffered major damages. Water levels on all lakes were lower in 1987 than in 1986 - a drop in level from October 1986 to October 1987 of between 33 to 70 centimeters depending on the lake. This reduced damages from flooding in 1987; consequently, attendance at the Council's first series of public meetings was less than the attendance at the public meetings held by the Shoreline Management Review Committee in 1986. Despite this drop in attendance, Council believes that government and individuals must act now, particularly during this period of lower water levels, to prevent or reduce future damages.

Council realizes that 1987 was the first year of the new shoreline management program which the Minister announced in December of 1986. Council also realizes that some parts of the program, because of their complex nature, need time to be fully implemented. Nonetheless, Council is pleased to learn that a good deal has been done by staff from the Ministry of Natural Resources and the Conservation Authorities towards full implementation of the program.

Council has reviewed the information it has received from the public meetings, meetings with Conservation Authority staff, university and government experts, as well as information obtained from its visits to many of the problem sites along the Great Lakes. After lengthy discussion Council has reached consensus on the following assessments and recommendations on managing the shores of Ontario's Great Lakes.

3.1 Lake Levels

3.1.1 Background

The Chairman's opening remarks at each public meeting indicated that the Shoreline Management Advisory Council was a Provincial Council and consequently focused on shoreline management matters that came within the mandate and responsibility of the Province. The Chairman emphasized that regulating water levels and flows in the Great Lakes and connecting channels is the responsibility of the Federal Governments of Canada and the United States, and is not within the jurisdiction of the Province. However, he pointed out that the Province and the Council were concerned with the levels of the lakes, and that the Council would pass on the concerns about water levels as expressed by the public to the Minister of Natural Resources.

Many people addressed the Council on the subject of water levels. Most stated that lake levels were too high. There were a few, however, who stated that levels were too low, and a few others said that the levels fluctuated over too large a range. Whatever the case, it is evident to Council that extreme high or low levels cause considerable damage and hardship to shoreline residents and others who use the lakes.

During the public meetings it became clear to Council that the public continues to be confused over the reasons for fluctuating Great Lakes water levels. Some members of the public attribute recent changes in water levels primarily to human manipulation. Only a few people at the public meetings seemed to realize that the natural variations in precipitation, evaporation and ice cover are the dominant factors in water level changes.

Control of Great Lakes water levels was the most popular request made to Council in our public meetings near Lakes Erie and Huron, despite the fact that there is considerable doubt among experts over what control of Great Lakes levels will accomplish to reduce damages along the shoreline. The public seldom questioned the degree to which Great Lakes levels can be controlled given our inability to forecast accurately weather months in advance. There were, however, a few people at public meetings who told Council that there should be no more interference with

nature nor with the flows into or out of these lakes. Others pointed out that Lake Ontario still has a shoreline which suffers considerable damage even though its water levels are regulated. One group objected to any increase in the maximum amount of water that may be stored on Lake Superior.

Although Council explained that water levels and flows in connecting channels were the responsibility of the Federal government, it was evident that many people were not aware of, or simply did not care about, the division of responsibilities between shore management and the control of water levels. Moreover, public presentations on the effect of shoreline fill on the capacity of the Niagara River at Fort Erie to discharge water made it clear to Council that the Province does have a role to play in water level control. This occurs through the permit process under Provincial legislation (i.e. The Lakes and Rivers Improvement Act, The Public Lands Act and The Conservation Authorities Act) for fill and construction in the connecting channels.

Several people thought that all responsibilities for Great Lakes water levels and flows should belong to one agency such as the International Joint Commission (IJC). Others suggested that the IJC's powers to regulate flows should be increased.

3.1.2 Assessment

- a. Both natural and man-made factors affect water levels but it is clear to Council that variations in natural factors (e.g. precipitation, evaporation, wind setup) are the dominant cause of both long and short term water level fluctuations on the Great Lakes.
- b. It is not possible to forecast these natural factors with sufficient accuracy for more than a few days in advance.
- c. Council recognizes that the Federal government did increase its efforts during the recent period of high water levels to inform the public of the factors affecting Great Lake water level fluctuations, however confusion still persists. It is apparent to Council that a greater educational effort is required to increase the public's understanding of this topic.
- d. It is technically possible to regulate Great Lakes water levels to achieve a limited reduction in the range of water level fluctuations in the long term, but not possible to eliminate the fluctuations.
- e. The regulation of Great Lakes water levels alone will not provide a complete solution to erosion and flooding problems experienced along the shorelines of the Great Lakes and will not remove the need for shoreline management.

- f. Land fill or dredging in critical sections of the connecting channels of the Great Lakes has an impact on lake levels. The Province has, to some extent, the ability under existing legislation to control such actions in the Ontario portion of these channels.
- g. Council believes that a greater degree of coordination between the various levels of government on both sides of the Great Lakes regarding influences on channel capacities and lake levels would benefit all residents of the basin.

3.1.3 Recommendations

Council recommends that:

- a. The Minister discuss with the Federal Minister of the Environment and those responsible for other appropriate federal agencies steps that can be taken by government to improve further the public's understanding of lake level fluctuations.
- b. The Minister ensure that effective controls over dredging, filling and construction in connecting channels are established along all such channels and ensure that they are enforced.
- c. The Province of Ontario approach the States of New York and Michigan to discuss ways of coordinating the control of filling, dredging or construction on both sides of the Niagara, Detroit, St. Clair and St. Mary's rivers.
- d. The Minister continue the dialogue on Great Lakes water levels with the Federal Minister of the Environment to ensure Ontario's interests are heard.
- e. The Minister continue to support the participation of Ministry of Natural Resources staff in the investigations into Great Lakes water levels which are being coordinated by the International Joint Commission.
- f. The Minister support cooperative research on the subject of Great Lakes hydrology between the various levels of government and the universities.

3.2 Jurisdiction

3.2.1 Background

In his announcement of December 1986 the Minister clearly stated that the Province of Ontario would provide the leadership for managing the shoreline of the Great Lakes in Ontario. The Ministry of Natural Resources was given the responsibility for leading the administration of the program. The Conservation Authorities were made the principal implementing agency for the program in areas within their jurisdiction. Implementation and program delivery include hazard land

mapping, local shoreline planning and other shore resource management functions. The Ministry of Natural Resources is responsible for implementing the program in areas where no Conservation Authority exists. This is consistent with the way the Province handles the riverine flood and erosion control program.

Many people have stated that they were confused over what is meant by "shoreline management" and what items can be addressed in Shoreline Management Plans. Council has found that the public is not well informed about the shoreline management responsibilities of the various levels of government, nor of the role of the Ministry of Natural Resources and the Conservation Authorities for shoreline management. Confusion exists over which agency is responsible for the different parts of the program, and particularly over the requirements for permits and approvals for shoreline construction.

Council has also found inconsistencies from one locality to another in the interpretation of the responsibilities of each of the agencies for particular aspects of the shoreline management program. Council heard from the members of some Conservation Authorities that they were not being well informed about the new responsibilities of the Conservation Authority and some complained that they had not been told the date they were to assume these responsibilities. Council notes that the Ministry of Natural Resources has officially transferred another component of the shoreline management program, namely input and review of municipal land use planning matters, to the Conservation Authorities beginning February 1, 1988.

A major element in implementing the program is the development of a Shoreline Management Plan. These plans are to be prepared for a study area consisting of a number of littoral cells or shoreline reaches each having similar characteristics. These cells and reaches do not respect artificial boundaries such as Conservation Authority or municipal boundaries. This being the case, Council is pleased to note that adjacent Conservation Authorities are working together to prepare plans for areas that overlap their boundaries. However, some Conservation Authorities said that they were not sure how to deal with the management of shorelines that fall within the boundaries of the Conservation Authority but are outside of the Authority's jurisdiction, for example, Provincial Parks and lands owned by the Government of Canada.

3.2.2 Assessment

- a. Council agrees that the responsibilities of each agency for the various aspects of the shoreline management program are not sufficiently clear to the public and, in some cases, to the staff of Conservation Authorities and Ministry of Natural Resources. This is understandable since it is the first year of the new shoreline management program.
- b. Council is pleased to note that the Ministry of Natural Resources has begun a series of information sessions for the staff of Conservation Authorities and Ministry on implementing the shoreline management program.

3.2.3 Recommendations

Council recommends that:

- a. The Minister accelerate the transfer of shoreline management responsibilities from the Province to the Conservation Authorities.
- b. The Minister take measures to inform the public of the shoreline management program and the responsibilities of the various agencies involved in the program.
- c. The Minister, on behalf of the Province, encourage the Government of Canada to develop a coordinated approach for shoreline management planning with the Ministry of Natural Resources and Conservation Authorities for areas under federal jurisdiction.
- d. The Minister clarify the responsibilities of each agency for shoreline management in areas of Provincial jurisdiction, such as Provincial Parks and Parks Commission areas, within Conservation Authority boundaries.

3.3 Prevention

3.3.1 Background

The prevention component of the Province's shoreline management program includes:

- flood and erosion hazard mapping;
- input to the municipal land use planning process;
- the implementation of Conservation Authorities Act Fill, Construction and Alteration to Waterways Regulations; and,
- measures to reduce the susceptibility of new development to flood and erosion hazards.

Flood and erosion hazard mapping has been done in a few areas in recent years. We are aware that the Ministry of Natural Resources is currently taking steps to facilitate mapping in other shoreline areas by accelerating the acquisition of new air photographs necessary to produce hazard land maps for the shores of Lake Erie and much of Lake Huron. This mapping is being undertaken by the Conservation Authorities with 50% federal, 40% provincial, and 10% local funding under the terms of the Canada-Ontario Flood Damage Reduction Program. Council was told that some Conservation Authorities are not proceeding with hazard mapping because the municipality to be mapped is not contributing the required 10% of the funding. Some Conservation Authority board members expressed the wish to have the requirement for local funding waived in cases where the municipality cannot afford to pay. Others told the Council that the Province should not require the consent of the municipality before hazard land mapping begins.

Some members of the public and some municipal representatives have told Council that they are ambivalent about having lands designated as flood or erosion hazard areas on these maps. Council learned that people are often unaware of the flood or erosion hazards of a property when they are considering purchase and that a disclosure of any such hazard should be required in all real estate transactions.

Council was told that the Ministry of Natural Resources, along with the Conservation Authorities, are establishing a shoreline erosion monitoring program to measure the recession of the shorelines of the Great Lakes caused by erosion. The program is similar to the earlier Canada/Ontario shoreline erosion monitoring program which was discontinued in 1981.

Some people asked that Fill, Construction and Alteration to Waterways regulations be enacted as soon as possible along the entire Great Lakes shoreline. Others have expressed their opinion to Council that these regulations would limit their ability to develop their property and are not required. Many people, though, have stated that such regulations are needed to limit the filling of shoreline lands, especially of scarce shoreline wetlands. Council also heard that consistent criteria for these regulations are needed across the Province. Some people are concerned that these regulations, which are enacted through the Conservation Authorities Act, are not available for use by the Ministry of Natural Resources to control shoreline activity in areas outside the borders of Conservation Authorities. Members of the public

told Council that the Ministry should have the statutory authority to put similar Fill, Construction and Alteration to Waterways Regulations in effect in territories solely under their jurisdiction. Others have stated that the Ministry could apply existing pieces of legislation to control shoreline development activity, but some have questioned the applicability of this legislation.

Municipalities are required to develop land use plans for their jurisdiction in accordance to the Planning Act, a Provincial Statute. The Province has the ability to direct land use planning policy by issuing Policy Statements under Section 3 of the Planning Act. It is Council's understanding that staff of the Ministry of Natural Resources are now drafting such a Policy Statement to guide planning agencies in managing land use along the Great Lakes shoreline. Some people have said that the preparation of this draft Policy Statement needs to be accelerated, circulated for public comment, and adopted as soon as possible by the Province. Council has also heard people state that the staff of the Ministry of Municipal Affairs that advise municipalities on land use planning matters, as well as review and approve Official Plans, need to consider shoreline management as a high priority.

The Ministry of Natural Resources issued "Guidelines for the Development of Shoreline Management Plans" in August of 1987 and distributed them to Conservation Authorities and Ministry offices to guide in the preparation of such plans. Several Conservation Authorities are already working on these plans. In one case four Conservation Authorities along the southeast shore of Lake Huron are working together to have a coordinated Shoreline Management Plan prepared for that portion of shoreline.

Council has heard that properties are being acquired as they become available by Conservation Authorities with the aid of grants from the Province in a couple of localities which have suffered damages from flooding. In these cases acquiring the properties has been the most economical means of preventing further flood damages. The properties acquired are often converted into waterfront parkland. Such programs are doubly beneficial for they reduce flood damages and provide needed recreational lands. Council has been told, however, that escalating land values in recent years have made it increasingly difficult for Conservation Authorities to acquire properties as they become available on the open market.

3.3.2 Assessment

- a. The Ministry of Natural Resources has placed a high priority on the prevention component of the shoreline management program.
- b. Topographic mapping that identifies those areas subject to shoreline flood and erosion hazards is essential for all areas with such hazards.
- c. Fill, Construction and Alteration to Waterways Regulations established by Conservation Authorities are an effective regulatory tool for preventing unsuitable development in areas subject to flooding and erosion.
- d. The public is not well aware of the benefits that may result from the use of Fill, Construction and Alteration to Waterways Regulations, nor are people well informed about the benefits of land use planning to minimize shoreline damage.
- e. The Lakes and Rivers Improvement Act, the Public Lands Act and regulations under the Conservation Authorities Act may all apply to activity in the shore zone. This overlap of jurisdiction in the legislation causes confusion among the regulatory agencies as well as the public. Council is pleased to learn that the Ministry of Natural Resources is now reviewing the use of legislation that may apply to the shore zone. The review is to find ways to solve the problems of overlap in applying these pieces of legislation.
- f. The systematic monitoring of shoreline erosion is necessary to calculate accurately shore recession rates and establish realistic erosion hazard construction setbacks.
- g. In some cases, the acquisition of developed properties that are subject to significant flood or erosion hazards may be the most economical means of preventing loss of life or property damages. In addition, the acquisition of such shoreline properties may provide other public benefits such as recreation areas or habitat for wildlife.
- h. Prospective buyers of shoreline properties are often not aware of the flood or erosion hazards that may affect a property. In many cases people do not know where to obtain flood and erosion hazard information for their prospective property.
- i. The adoption by the Province of a Policy Statement under the Planning Act on shoreline management will clearly establish the Province's intent on the subject and provide direction to all land use planning authorities in the province.
- j. A Shoreline Management Plan, prepared in accordance with the "Guidelines for the Development of Shoreline Management Plans", is a key component in the implementation of shoreline management.
- k. The Ministry of Natural Resources has the responsibility to ensure that Shoreline Management Plans are prepared for all Great Lakes shorelines.

3.3.3 Recommendations

Council recommends that:

- a. The Minister establish shoreline flood and erosion hazard land mapping carried out under the Canada-Ontario Flood Damage Reduction Agreement as a high priority of the Ministry of Natural Resources.
- b. The Minister ensure that all shoreline Conservation Authorities enact as quickly as possible regulations under Section 28 of the Conservation Authorities Act (commonly known as Fill, Construction and Alteration to Waterways Regulations) along the entire Great Lakes shoreline under their jurisdiction, including the connecting channels.
- c. The Province enact legislation to give the Ministry of Natural Resources regulatory powers similar to those available to the Conservation Authorities under Section 28 of the Conservation Authorities Act (Fill, Construction and Alteration to Waterways Regulations) in areas outside of Conservation Authorities.
- d. The Minister expand the efforts of the Ministry of Natural Resources to educate the public on the benefits of hazard land mapping and the application of Fill, Construction and Alteration to Waterways Regulations. Council suggests that the Ministry do this in cooperation with Environment Canada and the Conservation Authorities.
- e. The Minister ensure the continuation of on-going monitoring of shoreline erosion at representative erosion sites on all of the Great Lakes.
- f. The Minister request that the Minister of Consumer and Commercial Relations investigate the feasibility of adding a clause to all real estate "offer to purchase" forms that would require disclosing any known flood and erosion hazards on a property to the prospective purchaser.
- g. The Province increase the funding available for acquiring properties subject to flood or erosion hazards in those cases where acquisition is the most economical means of preventing loss of life or property damage.
- h. The Minister continue to expedite work leading to the adoption of a Policy Statement under the Planning Act on shoreline management.
- i. That the Minister act to ensure that Shoreline Management Plans, for all Great Lakes shorelines that are subjected to flood or erosion hazards, be completed as soon as possible.
- j. That the Minister encourage all responsible agencies to recognize that the conservation of wetlands is a highly desirable goal and to support the acquisition of significant wetlands for conservation.

3.4 Shore Protection

3.4.1 Background

Shore protection works (revetments, shore walls, groynes, breakwaters etc.) are structures that act to reduce shoreline erosion caused by wave action and other forces acting on the shore. Council learned that shore protection measures act to reduce the rate of erosion for a period of time, but do not eliminate erosion altogether. This period of time may range from days to decades depending on the design of the protective work and the environment to which it is subjected. Effective shore protection is the result of a design process which takes into consideration all of the site specific factors that may influence the success of the work. These factors include the following:

- physical conditions (wave, ice, groundwater, soil, nearshore current, water level fluctuations, longshore sediment movement etc.);
- social needs (navigation, beach access, boat mooring, aesthetic appeal, fishing etc.) and;
- biological factors (fish spawning, wetland habitat, etc.)

Shore protection suited to one site may fail to provide any protection at another. For this reason, perhaps, no standards exist for the construction of shore protection.

Council has seen a number of shore protection measures that have negative impacts not only on downdrift properties but also on the property which they are meant to protect. Council has also been told that gaps in an otherwise continuous series of shore protection works may greatly reduce or even eliminate the effectiveness of the works adjacent to these gaps.

Shore protection along the Great Lakes that will remain effective for a long period (say 20 years) is relatively expensive to build and maintain when compared to the cost of an average cottage or residence. Council has been told that, in many cases, the costs of shore protection works are greater than the value of the property they were constructed to protect. However, Council has also been told that the protective works might be justified economically because they also protect the roads, utilities and adjacent inland property. Some people have advocated non-structural options, such as relocating buildings on the property or government acquisition of the property, because of lower costs and less impact on adjacent

properties. Council has also heard that in a few cases property owners, who paid to have armour stone revetments constructed along their shoreline during the recent period of high water, are now seeking to have the revetment removed to improve access to their beach or the appearance of their property!

The shore protection program of the Province consists of a number of initiatives; these include both on-going and short-term programs of financial assistance and regulatory programs. The on-going assistance programs include:

- reduced interest rate loans to individual property owners for shore protection under the terms of the Shoreline Property Assistance Act;
- financial assistance for shore protection of agricultural lands done under the Drainage Act; and,
- several programs providing financial assistance to municipalities for the protection of new municipal infrastructure such as new sewage treatment plants and roads.

Short-term or emergency assistance programs include disaster relief, special grants for the repair of municipal infrastructure and Conservation Authority structures, free technical advice on shore protection to individual landowners, and free sand bags. The Ministry of Natural Resources has made a limited number of grants to Conservation Authorities to pay part of the costs of urgently needed shore protection works.

Several Conservation Authorities told Council that the Ministry of Natural Resources needs to establish an on-going grant program to assist in paying for shoreline capital works. These capital works include both structural shore protection works and non-structural measures.

Some municipalities have, at considerable expense, constructed works to protect their shoreline roads, buildings, parks, and utilities. Municipal representatives have suggested to Council that municipalities need either a grant or a low interest rate loan program funded by the Province to help pay the cost of new shore protection projects as well as repair existing shore protection structures.

Private individuals who take protective measures to reduce damages to their shoreline property may qualify for loans under the Shoreline Property Assistance Act. Non-structural measures as well as shore protection structures may qualify for these loans. The local municipality makes these loans to the landowner with funds

from the Ontario Ministry of Municipal Affairs. Not all shoreline municipalities participate in this program. A few members of the public told Council that these loans should be provided at even lower interest rates with no upper limit to the amount of the loan or cost per meter of shore protection. Some municipal officials have expressed to this Council their fear that their municipalities may be liable for defaults on payments on these loans by shoreline property owners. These municipal representatives pointed out that loans may be provided for shore protection works that cannot withstand the storm forces to which they are subjected. In such cases, owners might abandon their property after a severe storm has destroyed the shore protection and possibly the buildings.

Council recognizes that these concerns about shore protection funding are not new and that the Province, responding to recommendations of the Shoreline Management Review Committee in their October 1986 report, has been studying the feasibility of various program options.

Ministry of Natural Resources regulatory programs dealing with shore protection include the approval process under the Lakes and Rivers Improvement Act and the permit system associated with the Public Lands Act. Council has learned that regulatory programs are not applied consistently in all regions of the Province. In addition to Ministry of Natural Resources regulations, five Conservation Authorities presently require approvals for the construction of shore protection under their established Fill, Construction and Alteration to Waterways Regulations. Council has heard the public request that the approval process be streamlined and applied consistently across the Province.

Council has seen several structures intended to provide shore protection that have failed and heard of many more that were destroyed during a storm or failed gradually over a short period of time. Some property owners have told Council that contractors who construct shore protection should be tested and licensed by the government in order to promote better workmanship.

It is evident to Council that an in-depth understanding of shore zone processes is required to design shore protection works that will withstand the natural forces present and have minimal adverse impact on the natural environment. Council is pleased that the Ministry of Natural Resources recognizes the need for engineering

expertise in shore processes and seeks to engage qualified coastal engineers for its work. However, Council has found that there are relatively few professional engineers in the Province who are qualified in the field of coastal engineering. Council is aware of only one university in Ontario (Queen's University) that offers courses in coastal engineering and even these courses are at the advanced, graduate rather than the undergraduate level. Conservation Authorities have hired some staff to deal with shoreline management issues, but few are experienced coastal engineers. Conservation Authority representatives have indicated that a technical training program on the subjects of shore processes and coastal engineering would be desirable for their staff working in this area.

3.4.2 Assessment

- a. The power of the natural forces affecting the shoreline and the technical complexity of shore processes make the design of environmentally compatible shore protection difficult and very expensive.
- b. Inadequate shore protection measures are a waste of money and may provide a false sense of security to shoreline residents.
- c. The cost of effective structural shore protection measures may exceed the value of the property they are intended to protect.
- d. Coordinated shore management among property owners along a stretch of shoreline is desirable. There is no requirement at present that makes the construction of shore protection mandatory and probably such a requirement is not desirable.
- e. The Shoreline Property Assistance Act provides a means of assisting private landowners with the costs of both structural and non-structural shore protection measures.
- f. The technical design, construction and inspection of structural shore protection works can be improved. Coordination between funding and approval agencies can be of substantial benefit.
- g. The preparation of Shoreline Management Plans can include a determination and analysis of local shore processes leading to recommendations on the need for and the suitability of shore protection measures in each shoreline reach.
- h. Conservation Authority Fill, Construction and Alteration to Waterways Regulations enacted along the shoreline can be an effective means of controlling the design and construction of shore protection works. Existing Ministry of Natural Resources legislation can also apply to control shore protection works, but the legislation does not appear to be applied consistently across the Province.

- i. Coastal engineering courses and related technical training programs are severely limited in Ontario.
- j. There is research expertise on shore processes available in Ontario universities and government research institutes, but there does not appear to be sufficient research into the development of shore protection methods.

3.4.3 Recommendations

Council recommends that:

- a. The Minister support the continued funding of the Shoreline Property Assistance Act administered by the Ministry of Municipal Affairs.
- b. The Conservation Authorities join with their member municipalities along the shoreline in evaluating applications for funding under the Shoreline Property Assistance Act and provide technical advice and inspection under the Act.
- c. The Shoreline Management Plans of Conservation Authorities and the Ministry of Natural Resources provide sufficient information on shore processes in each shoreline reach to determine the need, suitability, and constraints to shore protection in the reach.
- d. The Minister ensure that Conservation Authorities enact Fill, Construction and Alteration to Waterways Regulations along the entire Great Lakes shoreline and connecting channels under their jurisdiction. This will enable the Conservation Authorities to control the approval of the design and construction of shore protection works and prevent damages to adjacent properties.
- e. The Ministry of Natural Resources use its existing legislation to control the approval of the design and construction of shore protection works until the Fill, Construction and Alteration to Waterways Regulations by the Conservation Authorities are implemented.
- f. The Ministry of Natural Resources arrange an on-going technical training program for staff of the Ministry and of the Conservation Authorities to broaden their understanding of shore processes and coastal engineering so that they may provide better shore management advice.
- g. The Minister act to foster research and development of effective shore protection measures.
- h. The Ministry of Natural Resources establish links with the universities and colleges to provide comprehensive training for shoreline management staff and encourage cooperative research and development.
- i. The Ministry of Natural Resources increase its efforts to collect, analyze and disseminate technical shore protection information for use by the Conservation Authorities, coastal engineers and the public.

3.5 Funding

3.5.1 Background

Council heard many requests for additional government funding for the shoreline management program from the public, municipal representatives, members of Conservation Authorities, and experts. Some of these requests were for particular projects, some for funding new province-wide programs, and others for increased funding for existing aspects of the shoreline management program.

Many Conservation Authorities stated that there were insufficient funds available under the program for them to finance their new shoreline management responsibilities, including the preparation of Shoreline Management Plans. Ministry of Natural Resources staff told Council that grants to support the preparation of these plans were limited and that not all Conservation Authorities could have plans funded in the same year. Staff explained that proposals for plans submitted to the Ministry by Conservation Authorities were ranked in terms of the magnitude of the shoreline problems the Conservation Authority experienced and that grants were allocated on that basis. Some Conservation Authorities have also described to Council the difficulty in getting a Provincial funding commitment for a multi-year project they wish to undertake. Similar statements were made about hazard land mapping by some Conservation Authorities representatives.

The question of funding Shoreline Management Plans in areas where no Conservation Authority exists arose at several meetings. The Ministry of Natural Resources is responsible for the development of these plans in these areas. Council was asked if local municipalities in these areas would have to pay for part of the cost of the plan, as they would if they were within a Conservation Authority. Council does not have an answer to this question.

Ministry of Natural Resources staff have told Council that it is the limited supply of qualified professionals and not funding that is the main constraint in the preparation of hazard land maps and Shoreline Management Plans.

Among the main requests were those from municipalities for funds to aid municipalities in repairing or maintaining damaged shore protection works. Although an added six million dollars was allocated for such work in the May 1987 Ontario budget, several municipal representatives told this Council that they were not yet able to obtain funding for shoreline protection repair work.

A representative from the City of Burlington told Council that a program to acquire shoreline property may fail because of insufficient Provincial funding. The project is being carried out by the local Conservation Authority which has determined that acquisition is, in this case, the most economical way to prevent flood damages and, at the same time, provide recreational access to the shore which the city needs. This project has been going on for a number of years and the properties have been purchased at market prices as they come up for sale. The representative from Burlington told Council that Provincial funding of the project has not kept up with the escalating property values in the region, thus the Conservation Authority cannot afford to purchase some properties as they become available on the market.

Council has heard a number of people say that some municipalities with a lengthy shoreline, but a relatively small tax base, find it difficult to raise the 10% local contribution required to have hazard land mapping carried out.

3.5.2 Assessment

- a. Council recognizes that the Province has limited funds to finance the hundreds of important and necessary programs it provides. However, adequate funding must be provided to make the shoreline management program a success.
- b. Insufficient funding by the Federal, Provincial and municipal governments could limit the areas for which hazard land mapping is produced.
- c. It appears that funding may be one of several constraints on the preparation of Shoreline Management Plans by both the Conservation Authorities and the Ministry of Natural Resources.
- d. Municipalities are having difficulty obtaining funds for the protection of publicly owned shoreline infrastructure.
- e. Acquisition of properties susceptible to severe flood or erosion damages is very limited partly because of insufficient funds.

3.5.3 Recommendations

Council recommends that:

- a. The Ministry of Natural Resources review its budget allocations to ensure that Conservation Authorities receive sufficient funding to fully implement their responsibilities under the shoreline management program.
- b. The Ministry of Natural Resources clarify its position on municipal contributions towards the funding of Shoreline Management Plans in areas outside of Conservation Authorities.
- c. The Ministry of Natural Resources provide sufficient funds for all shoreline Conservation Authorities and District Offices of the Ministry to begin the preparation of Shoreline Management Plans in 1988. In addition to this basic funding, funds should be provided to complete Shoreline Management Plans in localities where they are urgently needed.
- d. The Minister ensure that sufficient funds are provided for hazard land mapping by the Federal and Provincial governments so that funding does not prevent the production of these maps in localities that require them.
- e. The Minister consider increasing funding for hazard land acquisition to permit Conservation Authorities to continue existing acquisition projects and embark on new projects as they are needed. Council draws particular attention to the need for additional funds for the Burlington Beach land acquisition project of the Halton Region Conservation Authority.
- f. The Minister investigate the possibility of including a guarantee of multi-year funding in the Ministry's approval of long term capital works projects.
- g. The Minister require Conservation Authorities and Regional Offices of the Ministry to submit multi-year shoreline management budget requirements to the Ministry to facilitate its provision of staged funding for the program.

3.6 Emergency Measures

3.6.1 Background

Emergency measures for shoreline flooding and erosion hazards include flood warning systems, evacuation plans, plans for the construction of emergency protection works such as sandbag dikes, and action to ensure the continued provision of essential services during emergencies. The common basis for emergency measures is an Emergency Plan prepared for a municipality and adopted in a municipal by-law.

An Emergency Plan is an important element in preventing loss of life and reducing property damages. However, municipal planning for emergencies is optional and not all shoreline municipalities have developed these plans. Assistance with the development of emergency plans is provided by the Emergency Planning Coordinator, Ministry of the Solicitor General, by the Ministry of Natural Resources District and Regional Offices and by the Conservation Authorities. The Shoreline Management Plans to be prepared by each Conservation Authority, or Ministry of Natural Resources District Office, are to contain a review of emergency response measures available for that locality. The plans are to include recommendations to improve these response measures, if needed.

There were few comments concerning emergency measures during the public meetings of the Shoreline Management Advisory Council in 1987. The Ministry of Natural Resources was thanked for providing free sandbags to municipalities to distribute to shoreline residents as emergency flood protection.

3.5.2 Assessment

- a. Emergency Plans are important to prevent loss of life and property damage.
- b. All municipalities that have shoreline development subject to flooding should have an Emergency Plan.

3.5.3 Recommendations

Council recommends that:

- a. The Minister of Natural Resources continue to encourage and assist shoreline municipalities to develop Emergency Plans that address shoreline flood and erosion hazards.

3.7 The Shoreline Resource

3.7.1 Background

Many people recognize that the Great Lakes shoreline is a highly valued natural resource. The broad beaches, the fish spawning areas, the shoreline marshes, the sand dunes, and the migratory bird staging areas that are found along Ontario's Great Lakes shoreline have been mentioned as some of the many types of special

natural features worthy of conservation. A recent technical report entitled "Towards the Protection of Great Lakes Natural Heritage Areas", published by the Heritage Resources Centre at the University of Waterloo, presents a summary of some of the significant natural features along the shoreline of the Great Lakes.

A concern for the conservation of wetlands was expressed at several of the public meetings of Council. People said that shoreline marshes were being filled or dredged indiscriminately by some shoreline property owners and that local regulatory agencies were ineffective in preventing this wetland destruction. People pointed to land use controls in shoreline municipalities that, they claimed, encouraged inappropriate development on wetlands or other valuable natural shoreline features.

Council was told by members of the public that the construction of shore protection structures should be controlled to minimize any harm to wetlands or other natural features. Council was also told that Conservation Authorities normally must complete an environmental assessment process prior to the construction of shore protection works or other water management structures costing more than \$175,000. Private landowners are not normally required to follow an environmental assessment procedure prior to constructing shore protection works.

The Ministry of Natural Resources has acted to conserve some of Ontario's most significant natural shoreline features. Long Point, Wasaga Beach, Sibley, Sandbanks, Lake Superior and other Provincial Parks have been established to conserve some of the special features found around the lakes as well as provide shoreline recreational areas. The recent agreement between Ducks Unlimited, Wildlife Habitat Canada and the Ministry of Natural Resources has created a multi-year cooperative program to secure significant wetlands in the Province including some shoreline marshes. Pukaskwa, Point Pelee and Bruce Peninsula are National Parks that conserve some of the highly valued natural heritage resources found along the shoreline.

Council has learned that there are a considerable number of other significant natural areas along the somewhat less developed shoreline in northern Ontario that need protection now, prior to increased development pressure. These significant natural areas along the northern Great Lakes are generally not as well documented as those in southern Ontario.

3.7.2 Assessment

- a. There are relatively few natural areas remaining along the shoreline of the Great Lakes. The scarcity of these natural areas makes them valuable to the people of Ontario and worthy of conserving.
- b. Shoreline Management Plans are to address environmental concerns and may include recommendations for the conservation of natural shoreline features.

3.7.3 Recommendations

Council recommends that:

- a. Shoreline Management Plans have due regard for the conservation of the valuable and sensitive natural areas along the shoreline.
- b. The approval process for shore protection works consider the potential adverse impacts of these works on sensitive natural areas.

Appendix A Orientation Meetings

The following is a list of the orientation meetings Council held in 1987 to familiarize itself with shoreline management.

May 6 -Toronto

- Inaugural meeting
- Minister welcomed members
- reviewed Terms of Reference
- established Council procedures
- received background information on shorelines

May 29 - Toronto

presentations:

- need for shoreline management (Dr. R. Kreutzwiser, University of Guelph)
- shore processes (Dr. R. Davidson-Arnott, University of Guelph)
- water levels and flows in Great Lakes (Mr. P. Yee, Environment Canada)
- Ministry of Natural Resources shoreline initiatives (Mr. M. Lewis, Ministry of Natural Resources)
- Shoreline Property Assistance Act (Mr. C. Heal, Ministry of Municipal Affairs)

June 12, 13 Burlington and tour of Niagara area

presentations:

- shore processes and shore protection (Mr. G. Boyd, Fisheries and Oceans Canada)
- public lands along shorelines (Mr. L. Fleguel, Ministry of Natural Resources)

tour:

- the facilities of the Canadian Centre for Inland Waters
- outlet of Lake Erie into Niagara River at Fort Erie
- landfill sites along Niagara River
- flow control structure upstream of Niagara Falls and hydro-electric facilities

June 25, 26 - Windsor and tour of Essex area

presentations:

- hydrology of the Great Lakes system (Ms. H. Hartmann, U.S. Great Lakes Environmental Research Laboratory, Ann Arbor)
- shoreline management initiatives and responsibilities of the Essex Region Conservation Authority (Mr. P. Hale)

tour:

- flood and erosion control projects along the Lake Erie shore in Essex County
- low lying areas along the shores of Lake St. Clair

July 16, 17 - Kingston and tour of area

presentations:

- shore processes, protection and coastal engineering (Drs. J.W. Kamphuis and K. Hall, Queen's University)
- shoreline management initiatives and responsibilities of the Cataraqui Region, Ganaraska Region, Lower Trent Region, Moira River, Napanee Region, Prince Edward Region and Raisin Region Conservation Authorities (representatives from the seven Conservation Authorities)

tour:

- Queen's University Coastal Hydraulics Laboratory
- erosion sites and remedial works along eastern Lake Ontario shoreline

August 6,7 - Wroxeter, London and tour of Goderich area shore

presentations:

- shoreline management initiatives and responsibilities of the Maitland Valley, Ausable Bayfield and Saugeen Conservation Authorities (representatives from the three Conservation Authorities)
- Guidelines for developing shoreline management plans (Mr. M. Lewis, Ministry of Natural Resources)

tour:

- erosion sites and remedial works along eastern Lake Huron shoreline

August 27, 28 - Simcoe and tour of east Lake Erie shore

presentations:

- update on the shoreline management program of the Ministry of Natural Resources (Mr. R. Chang and Mr. D. Strelchuk, Ministry of Natural Resources)
- shoreline management initiatives and responsibilities of the Niagara Region, Grand River, Long Point Region, Catfish Creek, Kettle Creek, and the Lower Thames Valley Conservation Authorities (representatives from the six Conservation Authorities)

tour:

- Lake Erie shoreline erosion damage sites and protection works from Nanticoke to Long Point

September 12 - Collingwood and tour of south Georgian Bay shoreline

presentations:

- shoreline management initiatives and responsibilities of the Nottawasaga Valley, and Grey-Sauble Conservation Authorities (representatives from the two Conservation Authorities)

tour:

- shore development and damage from Collingwood to Wasaga Beach

November 27 - Toronto

presentations:

- shoreline management initiatives and responsibilities of the Halton Region Conservation Authority (Mr. R. Tufgar, Halton Region Conservation Authority)
- the Ontario wetlands conservation program (Mr. D. Hagan, Ministry of Natural Resources)
- update on the shoreline management program of the Ministry of Natural Resources (Mr. T. Farrell, Ministry of Natural Resources)

Appendix B List of Submissions

The following is a list of the people and organizations making formal submissions to Council at meetings or through the mail in 1987. Many other people, not listed here, made comments and asked questions at the public meetings.

Port Dover

1. Mrs. M. Millar - Turkey Point Property Owners' Association
2. Mr. H. Stark - Long Point Area Fish and Game Club
3. Mr. R. Easton - Canadian Coalition for Great Lakes Regulation and North Shore Coalition: Norfolk Chapter
4. Mr. J. Menegon - North Shore Coalition: Haldimand Chapter
5. Mrs. J. DeSerranno
6. Ms. Hedy Gerrett
7. Mr. E. Payne
8. Mr. A. Hailey
9. Ms. D. Bristow

Allanburg

1. Mr. M. Walker - North Shore Coalition: Fort Erie Chapter
2. Dr. B. Hough
3. Mrs. P. Scolfield - North Shore Coalition
4. Mr. H. Wolfe - Town of Fort Erie
5. Ms. S. Ziff - Town of Fort Erie

Collingwood

No formal submissions

Wheatley

1. Mr. M. Ewing - East Shore Coalition
2. Mr. J. Nash - East Shore Coalition and Essex County Floodplain Association
3. Mr. F. Nevin
4. Ms. F. Hardy
5. Reeve C. Cowan - Mersea Township
6. Ms. M. Cole - Sandwich West Shoreowners Coalition
7. Ms. S. Burbynuik
8. Reeve R. Goulet - Harwich Township

Bayfield

No formal submissions

Thunder Bay

1. Dr. H. Rasid - Township of Shuniah
2. Mayor J. Masters - City of Thunder Bay
3. Mr. W. Houston - Terrace Bay Township
4. Ms. M. Henttonen - Lakehead Region Conservation Authority

Trenton

1. Mr. C. Crews - Murray Township
2. Ms. A. Pumple - Wellers Bay Channel Association
3. Ms. S. Scarborough - Wellers Bay Channel Association
4. Mr. W. Warwick - Cataraqui Region Conservation Authority

Other submissions

1. Ms. S. Hazen - Canadian Coalition for Great Lakes Regulation
2. Ms. J. Leighton
3. Dr. R. Davidson-Arnott - University of Guelph
4. Dr. J. Pacsuta - North Shore Coalition
5. Mr. J. Oliver - Long Point Region Conservation Authority
6. Mr. F. Geitner - Huronview Ratepayers Association
7. Mr. A. Burge
8. Mr. C. Slein
9. Dr. G. Francis - Heritage Resource Centre, University of Waterloo
10. Mr. K. Whillans - Credit Valley Conservation Authority
11. Mr. J. King - St. Clair Region Conservation Authority
12. Mr. J. Lehner and Mrs. Ruth Lehner
13. Mr. J.D. Fleming - Lake Superior North Shore Lake Huron Property Owners Coalition
14. Mr. C.L. Stevens - MBW Industries Inc.
15. Mr. K.J. MacKenzie - Township of Sarnia
16. Mr. R.J. Heil - Township of Wainfleet
17. Mr. W.T. Foster - Metropolitan Toronto and Region Conservation Authority.
18. Mr. W.F. Warwick - Cataraqui Region Conservation Authority
19. Mrs. H. Rutherford - Ganaraska Region Conservation Authority
20. Mr. R. Hartley - Lakehead Region Conservation Authority
21. Mr. J. Kelleher - Lower Trent Region Conservation Authority
22. Mr. A. Marinelli - Niagara Peninsula Conservation Authority

Appendix C Public Meeting Registration

Note: not all people who attended the public meetings registered.

Allanburg

Dr. Otavio Sayao
Mr. Costa Koutroulakis
Mr. Bob Kennedy
Mr. V. Overend
Keith Anderson
Mr. & Mrs. A. Pacsuta
Alfred Marinelli

Dr. Bruce Hough
Mr. L. Kuhar
Leonard Gabryelski
Pat Scholfield
Michael Walker
Ruth Edgett
David Millar

Bayfield

Barbara Southcott
John Whalen
Case Brand
Bevan Lindsay
Greg St. Marie
G. Bradie
Don Kane
Dale Creighton
Ona & Don Huehn
Mary Van Trigt
William Partridge

Jim Quick
Walter McIlwain
Peter McCauley
John Given
Roy Book
Bill Arrand
D.K. Park
Rita Duncan
James Howard
Harold Seaman
Bill Archibald

Collingwood

John Kirby
Joan Reynolds
Katherine Huycke
Maureen Gowans
Jamie Adam
Mike Belcher
Howard Lee

Paul Reid
Karen Jantze
Gary Johnson
Ray Barker
Jim Belcher
Gerald Shortt
Dan White

Port Dover

Mr. & Mrs. C.H. Fraser
 Bob Easton
 Harry Stark
 B. & G. Keen
 Dick Soper
 William Varey
 Ruth & Frank Reitsma
 Rene & Joyce De Serranno
 D.L. Hall
 Mrs. Muriel Millar
 Robert Jacob
 R.H. Union
 Hazel Kett
 William Caverly
 Tom and June Tucker
 Bruce Ashcroft

Doris Marcellus
 Joe Menegon
 Edward Payne
 Wilbur F. Brann
 Glenn Coon
 Don & Marg Pursley
 Edna Goodlet
 M. E. Hughes
 Hedy Gerrett
 M. & B. Rutter
 Ross MacDonald
 Alex Bajars
 Mark Snowsell
 Chris Stewart
 Don Merritt

Thunder Bay

Dr. Harun Rasid
 Mr. J.P. Fraser

Bill Houston

Trenton

Mr. Colin Crews
 Mrs. Susan Scarborough
 P. O'Brien
 Ms. Jennie Ward
 Stewart Fyfe
 John Conley
 J.D. Kinney
 Gayle Frost
 Peter Cookson
 Hans Petersen

F. & E. Barrett
 S. & D. Hadlington
 Mr. Doug Cheer
 Randy Vilneff
 Susan Helliwell
 Jack Roblin
 Ann Pumple
 Ron Gibson
 Bill Warwick

Wheatley

Margot Cole
 John P. Nash
 Florence Hardy
 Art Denys
 Rosaire Rivait

Mr. Marvin Ewing
 Fred Nevin
 Mrs. Stella Berbynuk
 Walter Spence
 Clair Cowan

APPENDIX D
1988 Public Meeting Schedule

Burlington Canada Centre for Inland Water 867 Lakeshore Road	Sat. May 28/88 1:30 P.M.
Sault Ste. Marie Holiday Inn 208 St. Mary's River Road	Sat. June 18/88 1:30 P.M.
Clearwater (Sarnia) Town of Clearwater Municipal Building 2109 London Road	Fri. July 15/88 7:00 P.M.
St. Clair Beach (Windsor) Cada Municipal Complex 13677 St. Gregory's Road	Sat. July 16/88 1:30 P.M.
Port Burwell Port Burwell Public School 30 Strachan Street	Sat. Aug. 20/88 1:30 P.M.
Midland Midland Municipal Building 575 Dominion Avenue West	Sat. Sept. 10/88 1:30 P.M.





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